

Electrical Circuits MCQ Question Answer

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Question: 1. Conventional flow assumes charges flow from

- Option A. Positive to negative
- Option B. Positive to positive
- Option C. Negative to positive
- Option D. Negative to negative

Question: 2. Electron flow assumes charges flow from

- Option A. Negative to positive
- Option B. Negative to negative
- Option C. Positive to negative
- Option D. Positive to positive

Question: 3. Series resonance occurs when

- Option A. $X_L = X_C$
- Option B. $X_L = R$
- Option C. $Z = R$
- Option D. Both A and C

Question: 4. The symbol Q refers to

- Option A. Resonance quotient
- Option B. Quality factor
- Option C. Power quotient
- Option D. Qualification test

Question: 5. The ratio of W/VA in an ac circuit means

- Option A. Power factor
- Option B. Reactive factor
- Option C. Quality factor
- Option D. Load factor

Question: 6. What is the reciprocal of quality factor?

- Option A. Power factor
- Option B. Reactive factor
- Option C. Dissipation factor
- Option D. $1/Q$ factor

Question: 7. In liquids and gasesa ionization current results from a flow of

- Option A. Positive or negative ions

- Option B. Free electrons
- Option C. Ions that are lighter in weight than electrons
- Option D. Protons

Question: 8. $V_L = V_C$ in a series RLC circuit when

- Option A. The value of the impedance is minimum
- Option B. The power factor is zero
- Option C. The current leads the total voltage by 90°
- Option D. The total voltage is zero

Question: 9. At what frequency will an inductor of 5mH have the same reactance as a capacitor of 0.1 F?

- Option A. 7.12 kHz
- Option B. 7.12 Hz
- Option C. 7.12MHz
- Option D. 7.12 GHz

Question: 10. Property of an electric circuit that dissipates electric energy

- Option A. Reactance
- Option B. Impedance
- Option C. Resistance
- Option D. Conductance

Question: 11. What is the other name of relative permittivity?

- Option A. Dielectric strength
- Option B. Potential gradient
- Option C. Breakdown voltage
- Option D. Specific inductance capacity

Question: 12. In a series RLC circuit

- Option A. The current lags V_L by 90°
- Option B. The current leads V_L by 90°
- Option C. X_L leads X_C by 90°
- Option D. $Z = jX_L$ at resonance

Question: 13. Resistor with colored bands in the body

- Option A. Wire-wound resistor
- Option B. Carbon-composition resistor
- Option C. Potentiometer
- Option D. Rheostat

Question: 14. In a resonant circuit if $Q \gg 10$ resonant frequency _____ bandwidth.

- Option A. Bisects
- Option B. Exceeds
- Option C. Is less than
- Option D. Is equal to

Question: 15. Which of the following conditions is not true for a series RLC circuit at resonance?

- Option A. $Z = jX_L$
- Option B. $X_L = X_C$
- Option C. The power factor is one
- Option D. The magnitude of Z is

Question: 16. The current is ____ times the maximum current at half-power points of a resonance curve.

- Option A.
- Option B.

Question: 17. A gang capacitor is a variable capacitor in which capacitance is varied by changing the

- Option A. Dielectric
- Option B. Number of plates
- Option C. Plate area
- Option D. Distance between plates

Question: 18. In an ac circuit with inductive reactance X_L , the

- Option A. Phase angle of the circuit is always 45°
- Option B. Voltage across the inductance must be 90° out of phase with the applied voltage
- Option C. Current through the inductance lags its induced voltage by 90°
- Option D. Current through the inductance and voltage across it are 180° out of phase

Question: 19. If three 9 mH inductors are connected in parallel without mutual inductance then the total inductance is

- Option A. 3 mH
- Option B. 9 mH
- Option C. 27 mH
- Option D. 18 mH

Question: 20. What is the specific resistance of a pure germanium?

- Option A. 55 Ω -cm
- Option B. 55 Ω -m
- Option C. 55 Ω -mm
- Option D. 55 k Ω -m

Question: 21. Two capacitors of capacitance 9 F and 18 F in series will have a total capacitance of

- Option A. 27 F
- Option B. 162 F
- Option C. 6 F
- Option D. 180 F

Question: 22. In a series RLC circuit

- Option A. Increasing the frequency decreases the resistance
- Option B. Increasing the frequency increases the resistance
- Option C. Both X_L and X_C change as frequency changes
- Option D. Impedance will always decrease

Question: 23. A series RLC circuit has a _____ power factor at its half-power points

- Option A. Unity
- Option B. Leading
- Option C. Lagging
- Option D. Either B or C

Question: 24. Kirchhoff's laws (KCL and KVL) are applicable to

- Option A. DC circuits
- Option B. AC circuits
- Option C. DC as well as AC circuits
- Option D. Passive networks alone

Question: 25. A tank circuit is a

- Option A. Parallel LC circuit
- Option B. Series LC circuit
- Option C. A resonant circuit
- Option D. A non-resonant circuit

Question: 26. A capacitive load always has a _____ power factor

- Option A. Leading
- Option B. Lagging
- Option C. Zero
- Option D. Unity

Question: 27. What is the temperature coefficient of the resistance of a pure metal?

- Option A. Infinity
- Option B. Negative
- Option C. Almost zero
- Option D. Positive

Question: 28. As applied to a series RLC circuit, a bandwidth means

- Option A. The frequency range for maximum power transfer
- Option B. The difference between the highest and lowest frequencies of the oscillator
- Option C. The separation of the half-power points
- Option D. The frequency at which $X_L = X_C$

Question: 29. Which is considered as the effect of a dielectric material?

- Option A. Increasing capacitance
- Option B. Decreasing capacitance
- Option C. Reducing the working voltage
- Option D. Increasing the distance between the plates

Question: 30. The open-circuit voltage at the terminal of load R_L is 60V. Under the condition of maximum power transfer the load voltage will be

- Option A. 60 V
- Option B. 15 V
- Option C. 20 V
- Option D. 30 V

Answer Sheet

1	A	
2	A	
3	D	
4	B	
5	A	
6	C	
7	B	
8	A	
9	A	
10	C	
11	D	
12	A	
13	B	
14	A	
15	A	
16	A	
17	C	
18	C	
19	A	
20	A	
21	C	
22	C	
23	D	
24	C	
25	A	
26	A	
27	C	
28	C	
29	A	
30	D	